

US04-41677
01 JULY 2005

CLAIMS:

What is claimed is:

1. A heat conduction device for dissipating heat from a heat-generating component, the heat conduction device comprising:

a radiator, the radiator having a top surface and a bottom surface, the radiator further having a through-hole extending from the top surface to the bottom surface; and

5 a column body received within the radiator through-hole, the column body having a first end and a second end, the first end having a recess therein that forms a hollow portion to increase the radiating surface and the second end having a contact surface for receiving heat from the heat generating component, wherein the column body has a height at least approximately the distance between the top surface and the bottom surface of the radiator and
10 wherein the recess is defined by an inner wall that extends continuously in a direction away from the second end.

2. The heat conduction device according to claim 1, wherein the contact surface of the column body extends out radially to form a flange, wherein the radiator through-hole is
15 round, and where the radius of the flange is larger than that of the through-hole.

3. The heat conduction device according to claim 2, wherein a clamp is disposed between the flange of the column body and the radiator.

20 4. The heat conduction device according to claim 3, wherein the clamp includes a ring part and a plurality of support parts, the ring part including an opening therein, and wherein the opening has a diameter that is smaller than the radius of the flange.

5. The heat conduction device according to claim 4, wherein the support parts
25 extend outwardly from the ring part.

6. The heat conduction device according to claim 4, wherein the support parts include a through hole.

9

US04-41677
01 JULY 2005

7. The heat conduction device according to claim 3, further including a circuit board, the clamp being used to retain the heat conduction device to the circuit board.

5 8. The heat conduction device according to claim 1, wherein the heat-generating component is the central processing unit (CPU).

9. The heat conduction device according to claim 1, wherein the heat-generating component is the heat conduction board.

10 10. The heat conduction device according to claim 1, wherein the column body is cylindrical.

11. The heat conduction device according to claim 1, wherein a bottom portion of
15 the hollow portion is bowl-like.

12. The heat conduction device according to claim 1, wherein the column body is made of copper.

20 13. The heat conduction device according to claim 1, wherein the column body is made of copper and the radiator is made of aluminum.

14. The heat conduction device according to claim 1, wherein the radiator includes a base part and a plurality of radiating fins, the base part having said through-hole, the
25 radiating fins extending out radially from an outer surface of the base part.

15. The heat conduction device according to claim 1, wherein solder is applied to at least one of an external surface of the column body and the radiator through-hole to fix the column body to the radiator.

10

US04-41677
01 JULY 2005

16. The heat conduction device according to claim 1, wherein the contact surface of the column body includes a flange that extends from the column body, the flange being sized so that it is larger than the radiator through-hole.

5 17. The heat conduction device according to claim 1, wherein the radiator through-hole is round.

18. The heat conduction device according to claim 1, wherein a fan is mounted to an upper surface of the radiator.

10

19. The heat conduction device according to claim 1, wherein the radiator includes a plurality of fins.

11
②